

IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A surgical tool for making an incision in scleral tissue of an eye comprising:

a curved surgical blade operable under control of said surgical tool to rotate with respect to said surgical tool ~~capable of being moved by said surgical tool~~ through said scleral tissue of said eye to make an incision having the form of a scleral pocket that is capable of receiving a scleral prosthesis.

2. (Currently Amended) A surgical tool as claimed in Claim 1 wherein said curved surgical blade ~~comprises a curved cutting blade that is capable of making~~ has dimensions that make an incision in said scleral tissue that is approximately one and one half millimeters wide and approximately four millimeters long, said incision being located approximately four hundred microns under a surface of said scleral tissue.

3. (Original) A surgical tool as claimed in Claim 1 further comprising a base housing comprising:

a first drive shaft for providing bidirectional rotational motion to said surgical blade;

a drive motor coupled to said first drive shaft, said drive motor capable of providing bidirectional rotational motion to said first drive shaft; and

a control cable receptacle coupled to said drive motor, said control cable receptacle capable of receiving electrical power from an external power source and providing said electrical power to said drive motor to operate said drive motor.

4. (Original) A surgical tool as claimed in Claim 1 further comprising a surgical tool controller, wherein said surgical tool is capable of receiving control signals from said surgical tool controller and capable of using said control signals to control said surgical blade of said surgical tool; and

wherein said surgical tool controller is capable of sending said control signals to said surgical tool in response to receiving control signals from a surgeon who is using said surgical tool to make an incision in said scleral tissue of said eye.

5. (Original) A surgical tool controller as claimed in Claim 4 further comprising a foot switch coupled to said surgical tool controller through a control signal line, said foot switch capable of sending control signals from said surgeon to said surgical tool controller to control said surgical blade of said surgical tool.

6. (Original) A surgical tool as claimed in Claim 3 further comprising:
a drive shaft housing coupled to said base housing, said drive shaft housing comprising a second drive shaft coupled to said first drive shaft;
a blade mount housing comprising a third drive shaft coupled to said second drive shaft, said blade mount housing being mounted on said drive shaft housing at an angle with respect to a central axis of said drive shaft housing; and
wherein said surgical blade is coupled to said third drive shaft of said blade mount housing.

7. (Original) A surgical tool as claimed in Claim 6 further comprising an external reference line marked on a surface of said blade mount housing, said external reference line indicating a desired location for placing said surgical tool on an eye to make an incision in scleral tissue of said eye to form a scleral pocket that is capable of receiving a scleral prosthesis.

8. (Original) A surgical tool as claimed in Claim 7 wherein said external reference line is located on said surface of said blade mount housing so that a desired location on said eye for aligning said external reference line with said eye is a limbus of said eye.

9. (Original) A surgical tool as claimed in Claim 6 wherein said surgical blade comprises:

a rotatable support arm having a first end coupled to said third drive shaft of said blade mount housing; and

a curved cutting blade having a first end coupled to a second end of said rotatable support arm, said curved cutting blade having a second end that is capable of making an incision in said scleral tissue that is approximately one and one half millimeters wide and approximately four millimeters long, said incision being located approximately four hundred microns under a surface of said scleral tissue.

10. (Currently Amended) A surgical tool ~~as claimed in Claim 9~~ further for making an incision in scleral tissue of an eye, comprising:

a surgical blade capable of being moved by the surgical tool through the scleral tissue of the eye to make an incision, the incision having the form of a scleral pocket that is capable of receiving a scleral prosthesis;

a base housing comprising a first drive shaft and a drive motor capable of providing bidirectional rotational motion to the first drive shaft;

a drive shaft housing comprising a second drive shaft coupled to the first drive shaft;

a blade mount housing comprising a third drive shaft coupled to the second drive shaft, the blade mount housing being mounted on the drive shaft housing at an angle with respect to a central axis of the drive shaft housing, wherein the surgical blade comprises (i) a rotatable support arm coupled to the third drive shaft and (ii) a curved cutting blade coupled to the rotatable support arm; and

a blade guide mounted on said blade mount housing, said blade guide having portions that form a circularly shaped surface that is concentric with said curved cutting blade but having a radius less than a radius of said curved cutting blade, so that said curved cutting blade passes over said circularly shaped surface of said blade guide when said support arm rotates said curved cutting blade in a forward direction.

11. (Original) A surgical tool as claimed in Claim 10 wherein a distance between said circularly shaped surface of said blade guide and said curved cutting blade when said support arm rotates said curved cutting blade in a forward direction over said circularly shaped surface of said blade guide is approximately four hundred microns.

12. (Original) A surgical tool as claimed in Claim 10 wherein said blade guide comprises portions that form a forward motion safety stop for stopping a forward motion of said curved cutting blade.

13. (Currently Amended) A surgical tool as claimed in Claim 10 wherein said blade guide comprises:

a first end portion that forms a first blade slot on a first end of said blade guide; and

a second end portion that forms a second blade slot on a second end of said blade guide;

wherein said first blade slot and said second blade slot are capable of slidably receiving said curved ~~circular~~ cutting blade when said support arm rotates said curved ~~circular~~ cutting blade over said circularly shaped surface of said blade guide.

14. (Currently Amended) A surgical tool as claimed in Claim 10 wherein said blade guide comprises:

a pressure sensor capable of determining a measurement of pressure between said circularly curved surface of said blade guide and a surface of said scleral tissue when said circularly curved surface of said blade guide is placed into contact with said surface of said scleral tissue; and

a signal line coupling said pressure sensor to [[said]] a surgical tool controller to provide said measurement of pressure to said surgical tool controller.

15. (Original) A surgical tool as claimed in Claim 14 wherein said surgical tool controller sends a control signal to said surgical tool disabling bidirectional rotational motion of said surgical blade when said measurement of pressure from said pressure sensor of said blade guide does not exceed a selected pressure level.

16. (Original) A surgical tool as claimed in Claim 10 further comprising means for holding said scleral tissue against said circularly curved surface of said blade guide when said curved cutting blade makes an incision in said scleral tissue.

17. (Original) A surgical tool as claimed in Claim 16 wherein said means for holding said scleral tissue against said circularly curved surface of said blade guide when said curved cutting blade makes an incision in said scleral tissue comprises a scleral tissue fixation tool.

18. (Original) A surgical tool as claimed in Claim 17 wherein said scleral tissue fixation tool comprises:

a shaft; and

at least one fixation barb affixed to an end of said shaft, said at least one fixation barb capable of holding said scleral tissue when said fixation barb is rotated into engagement with said scleral tissue.

19. (Original) A surgical tool as claimed in Claim 17 wherein said means for holding said scleral tissue against said circularly curved surface of said blade guide when said curved cutting blade makes an incision in said scleral tissue comprises a vacuum.

20. (Currently Amended) A surgical tool as claimed in Claim 10 wherein: 9
~~further comprising:~~

~~a blade guide mounted on said blade mount housing, said blade guide having portions that form a circularly shaped surface that is concentric with said curved cutting blade but having a radius less than a radius of said curved cutting blade, so that said curved cutting blade passes over said circularly shaped surface of said blade guide when said support arm rotates said curved cutting blade in a forward direction;~~

said blade guide comprises [[ing]] portions that form a vacuum chamber within [[the]] an interior of said blade guide, ~~and comprising~~ portions that form a plurality of access ports between said vacuum chamber and said circularly shaped surface, and ~~comprising~~ portions that form a vacuum coupling that is capable of being coupled to a vacuum supply line.

21. (Currently Amended) A surgical tool as claimed in Claim 20 wherein said blade guide holds said scleral tissue against said circularly curved surface of said blade guide when said curved cutting blade makes an incision in said scleral tissue ~~comprises a scleral tissue fixation tool~~ by applying a vacuum to said scleral tissue through said plurality of access ports.

Claims 22-30 (Cancelled).

31. (Currently Amended) A surgical tool comprising:
a curved surgical blade; and
a motor operable to ~~move~~ rotate said curved surgical blade with respect to said surgical tool to move said curved surgical blade through scleral tissue of an eye to make an incision, said incision forming a scleral pocket in the region of the ciliary body of said eye, said scleral pocket having a form capable of receiving a scleral prosthesis to increase the effective working distance of the ciliary muscle of said eye.

32. (Currently Amended) The surgical tool as set forth in Claim 31 further comprising a first drive shaft associated with said motor and operable to drive said ~~movement~~ rotation of said surgical blade.

33. (Previously Presented) The surgical tool as set forth in Claim 31 further comprising a receptacle associated with said motor that is capable of receiving electrical power from a power source.

34. (Previously Presented) The surgical tool as set forth in Claim 33 wherein said receptacle is further capable of providing said electrical power to said motor.

35. (Previously Presented) The surgical tool as set forth in Claim 31 further comprising a controller operable to generate control signals.

36. (Previously Presented) The surgical tool as set forth in Claim 35 wherein said controller is associated with said motor and said generated control signals control movement of said surgical blade.

37. (Previously Presented) The surgical tool as set forth in Claim 36 wherein one controlled movement of said surgical blade is to make said incision.

38. (Previously Presented) The surgical tool as set forth in Claim 36 wherein one controlled movement of said surgical blade is to position said surgical blade to make said incision.

39. (Currently Amended) The surgical tool as set forth in Claim 35 further comprising a switch for use by a surgeon, said switch associated with said controller and capable of receiving control signals from the surgeon, said received control signals to control movement of said surgical blade.

40. (Previously Presented) The surgical tool as set forth in Claim 39 wherein one controlled movement of said surgical blade is to make said incision.

41. (Previously Presented) The surgical tool as set forth in Claim 39 wherein one controlled movement of said surgical blade is to position said surgical blade to make said incision.

42. (Previously Presented) The surgical tool as set forth in Claim 31 further comprising a power source.

43. (Previously Presented) The surgical tool as set forth in Claim 42 wherein said power source is externally coupled to said surgical tool.

44. (Currently Amended) A surgical tool comprising:
a curved surgical blade; and
a controller operable to control rotational movement of said curved surgical blade through scleral tissue of an eye to make an incision, said incision forming a scleral pocket in the region of the ciliary body of said eye, said scleral pocket having a form capable of receiving a scleral prosthesis that increases the effective working distance of the ciliary muscle of said eye.

45. (Previously Presented) The surgical tool as set forth in Claim 44 further comprising a motor operable to receive control signals from said controller, said control signals controlling movement of said surgical blade.

46. (Previously Presented) The surgical tool as set forth in Claim 45 wherein one controlled movement of said surgical blade is to make said incision.

47. (Previously Presented) The surgical tool as set forth in Claim 45 wherein one controlled movement of said surgical blade is to position said surgical blade to make said incision.

48. (Previously Presented) The surgical tool as set forth in Claim 44 further comprising a first drive shaft associated with said controller and operable to drive said movement of said surgical blade.

49. (Previously Presented) The surgical tool as set forth in Claim 44 further comprising a receptacle that is capable of receiving electrical power from a power source.

50. (Previously Presented) The surgical tool as set forth in Claim 49 wherein said receptacle is further capable of providing said electrical power to said controller.

51. (Currently Amended) The surgical tool as set forth in Claim 44 further comprising a switch for use by a surgeon, said switch associated with said controller and capable [[fo]] of receiving control signals from the surgeon, said received control signals to control movement of said surgical blade.

52. (Previously Presented) The surgical tool as set forth in Claim 51 wherein one controlled movement of said surgical blade is to make said incision.

53. (Previously Presented) The surgical tool as set forth in Claim 51 wherein one controlled movement of said surgical blade is to position said surgical blade to make said incision.

54. (Previously Presented) The surgical tool as set forth in Claim 44 further comprising a power source.

55. (Previously Presented) The surgical tool as set forth in Claim 54 wherein said power source is externally coupled to said surgical tool.

56. (Currently Amended) A surgical tool comprising:
a curved surgical blade; and
an apparatus operable to ~~move~~ rotate said curved surgical blade through scleral tissue of an eye to make an incision, said incision forming a scleral pocket in the region of the ciliary body of said eye, said scleral pocket having a form capable of receiving a scleral prosthesis to increase the effective working distance of the ciliary muscle of said eye.

57. (Previously Presented) The surgical tool as set forth in Claim 56 further comprising a first drive shaft associated with said apparatus and operable to drive said movement of said surgical blade.

58. (Previously Presented) The surgical tool as set forth in Claim 56 wherein said apparatus is a motor and said surgical tool further comprises a receptacle associated with said motor that is capable of receiving electrical power from a power source.

59. (Previously Presented) The surgical tool as set forth in Claim 58 wherein said receptacle is further capable of providing said electrical power to said apparatus.

60. (Previously Presented) The surgical tool as set forth in Claim 56 wherein said apparatus is a motor and said surgical tool further comprises a power source.

61. (Previously Presented) The surgical tool as set forth in Claim 60 wherein said power source is externally coupled to said surgical tool.

62. (New) The surgical tool of Claim 1, wherein the curved surgical blade is operable, under the control of the surgical tool, to rotate through the scleral tissue of the eye to make the incision, the surgical blade being rotatable about a central axis of a blade mount housing on which the surgical blade is mounted.

63. (New) The surgical tool of Claim 1, wherein the curved surgical blade has an end that is operable, under the control of the surgical tool, to be rotated in one direction into and then out of the scleral tissue of the eye to make the incision.

64. (New) The surgical tool of Claim 1, wherein the curved surgical blade comprises a cutting blade having an end operable to be moved through an anterior surface of the scleral tissue of the eye without passing through a posterior surface of the scleral tissue of the eye to make the incision.

65. (New) The surgical tool of Claim 10, wherein the second end of the cutting blade is operable to be moved through an anterior surface of the scleral tissue of the eye without passing through a posterior surface of the scleral tissue of the eye to make the incision.

66. (New) The surgical tool of Claim 31, wherein the curved surgical blade comprises a cutting blade having an end operable to be moved through an anterior surface of the scleral tissue of the eye without passing through a posterior surface of the scleral tissue of the eye to make the incision.

67. (New) The surgical tool of Claim 44, wherein the curved surgical blade comprises a cutting blade having an end operable to be moved through an anterior surface of the scleral tissue of the eye without passing through a posterior surface of the scleral tissue of the eye to make the incision.

68. (New) The surgical tool of Claim 56, wherein the curved surgical blade comprises a cutting blade having an end operable to be moved through an anterior surface of the scleral tissue of the eye without passing through a posterior surface of the scleral tissue of the eye to make the incision.